

**2016 ROUTINE
BRIDGE INSPECTION REPORT**



**BRIDGE # 6599
CSAH 31(EB MRYLD) over PED TRAIL**

DISTRICT: Metro

COUNTY: Ramsey

CITY/TOWNSHIP: St Paul

STATE: Minnesota

Date of Inspection: 09/15/2016

Equipment Used:

Owner: County Highway Agency

Inspected By: Engel, Michael; Reimer, Dan; Sanders, Rick

Report Written By: Dan Reimer

Report Reviewed By: Glenn Pagel

Final Report Date: 12/06/2016

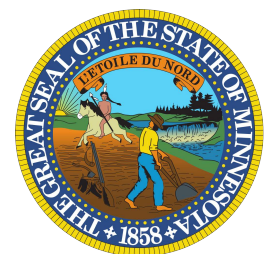


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Minnesota Structure Inventory Report

Bridge ID: 6599

CSAH 31(EB MRYLD) over PED TRAIL

Date: 11/16/2016

+ GENERAL +	+ ROADWAY +	+ INSPECTION +																				
Agency Br. No. Crew District 05 Maint. Area County 062 - Ramsey City St Paul Township Desc. Loc. 0.1 MI E OF JCT CSAH 55 Sect., Twp., Range 30 - 029N - 22W Latitude 44 ° 58 ' 36.46 " Longitude 93 ° 5 ' 31.24 " Custodian 02 - County Highway Agency Owner 02 - County Highway Agency BMU Agreement Year Built 1953 MN Year Reconstructed 2009 FHWA Year Reconstructed MN Temporary Status Bridge Plan Location 4 - MUNICIPAL Date Opened to Traffic On - Off System 1 - ON Legislative District 66A Potential ABC 2 - N/A	Bridge Match ID (TIS) 0 Roadway O/U Key Route On Structure Route Sys 04 - CSAH Number 31 Roadway Name or Description CSAH 31 Level of Service 1 - MAINLINE Roadway Type 1 - 1-way traffic Control Section (TH Only) Reference Point 003+00.660 Detour Length 2.0 mi. Lanes ON 2 UNDER 0 ADT 13894 YEAR 2008 HCA DT ADTT % Functional Class 16 - Urban - Minor Arterial	Userkey 199 Structurally Deficient N Functionally Obsolete Y Sufficiency Rating 78.5 Routine Inspection Date 09/15/2016 Routine Inspection Frequency 24 Inspector Name Reimer, Dan Status A - Open																				
		+ NBI CONDITION RATINGS +																				
		Deck 8 Unsound Deck % Superstructure 8 Substructure 8 Channel N Culvert N																				
		+ NBI APPRAISAL RATINGS +																				
		Structure Evaluation 8 Deck Geometry 3 Underclearances N Waterway Adequacy N Approach Alignment 7																				
		+ SAFETY FEATURES +																				
		Bridge Railing 1 - MEETS STANDARDS GR Transition N - NOT REQUIRED Appr. Guardrail N - NOT REQUIRED GR Termini N - NOT REQUIRED																				
		+ IN DEPTH INSP. +																				
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">Y/N</th> <th style="width: 10%; text-align: center;">Freq</th> <th style="width: 20%; text-align: center;">Date</th> </tr> </thead> <tbody> <tr> <td>Frac. Critical</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Underwater</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Pinned Asbly.</td> <td style="text-align: center;">N</td> <td></td> <td></td> </tr> <tr> <td>Spec. Feat.</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Y/N	Freq	Date	Frac. Critical	N			Underwater	N			Pinned Asbly.	N			Spec. Feat.			
	Y/N	Freq	Date																			
Frac. Critical	N																					
Underwater	N																					
Pinned Asbly.	N																					
Spec. Feat.																						
		+ WATERWAY +																				
		Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year																				
		+ CAPACITY RATINGS +																				
		Design Load 9 - HS 25 (OR GREATER) Operating Rating 2 - HS TRUCK 40.0 Inventory Rating 2 - HS TRUCK 25.0 Posting VEH: SEMI: DBL: Rating Date 05/27/2011 Overweight Permit Codes A N - N/A B N - N/A C N - N/A																				
+ STRUCTURE +	+ RDWY DIMENSIONS +																					
Service On 5 - Highway-pedestrian Service Under 3 - Pedestrian - bicycle Main Span Type 1 - Concrete Main Span Design 09 - Slab Span Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 36 LEFT Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 42.0 ft. Structure Length 108.7 ft. Deck Width (Out-to-Out) 41.0 ft. Deck Material 1 - Concrete Cast-in-Place Wear Surf Type 4 - Low Slump Concrete Wear Surf Install Year 2009 Wear Course/Fill Depth 0.17 ft. Deck Membrane 0 - None Deck Rebars 1 - Epoxy Coated Reinforcing Deck Rebars Install Year 2009 Structure Area (Out-to-Out) 4457 sq. ft. Roadway Area (Curb-to-Curb) 3100 sq. ft. Sidewalk Width 50A. Lt 0.00 ft. 50B. Rt 7.00 ft. Curb Height Lt 0.75 ft. Rt 0.75 ft. Rail Type Lt NN Rt 28	If Divided NB-EB SB-WB Roadway Width 28.0 ft. ft. Vertical Clearance ft. ft. Max. Vert. Clear. ft. ft. Horizontal Clear. 27.9 ft. ft. Lateral Clearance ft. ft. Appr. Surface Width 28.0 ft. Bridge Roadway Width 28.0 ft. Median Width On Bridge ft.																					
		+ MISC. BRIDGE DATA +																				
		Structure Flared 0 - No flare Parallel Structure R - Right structure (North or East) Field Conn. ID Abutment Foundation (Material/Type) 1 - CONC 3 - FTG PILE Pier Foundation (Material/Type) 1 - CONC 3 - FTG PILE Historic Status 5 - Not eligible																				
		+ PAINT +																				
		Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type																				
		+ BRIDGE SIGNS +																				
		Posted Load 0 - Not Required Traffic 0 - Not Required Horizontal 0 - Not Required Vertical N - Not Applicable																				

MINNESOTA BRIDGE INSPECTION REPORT

12/06/2016

Inspector: CO Bridge

BRIDGE 6599 CSAH 31(EB MRYLD) OVER PED TRAIL

County: Ramsey	Location: 0.1 MI E OF JCT CSAH 55	Length: 108.7 ft.
City: St Paul	Route: 04 - CSAH 31 Ref. Pt.: 003+00.660	Deck Width: 41.0 ft.
Township:	Control Section:	Rdwy. Area/ Pct. Unsnd: 3100 sq. ft. / %
Section: 30 Township: 029N Range: 22W Maint. Area:		Paint Area/ Pct. Unsnd: sq. ft. / %
Span Type: 1 - Concrete 1 - Slab	Local Agency Bridge Nbr.:	Culvert: N/A
List:		Postings:

NBI Deck: 8 Super: 8 Sub: 8 Chan: N Culv: N
 Open, Posted, Closed: A - Open
 MN Scour Code: A - NON WATERWAY

Appraisal Ratings - Approach: 7 Waterway: N	Unofficial Structurally Deficient N
Required Bridge Signs - Load Posting: 0 - Not Required	Unofficial Functionally Obsolete Y
Horizontal: 0 - Not Required	Unofficial Sufficiency Rating 78.5
Traffic: 0 - Not Required	
Vertical: N - Not Applicable	

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
38	Reinforced Concrete Slab	Routine	09/15/2016	4332 SF	4332	0	0	0
		Migrated Values		4332 SF	4332	0	0	0
	Notes: Deck width 41' X length 108.7' (2011)							
	510 - Wearing Surfaces	Routine	09/15/2016	3100 SF	3100	0	0	0
		Migrated Values		3100 SF	3100	0	0	0
	Notes: Deck and superstructure replaced in 2009. LS overlay has no spalls, delams. or patches. 2013-16 Unsealed insignificant cracks, less than .012" wide. 2016							
205	Reinforced Concrete Column	Routine	09/15/2016	6 EA	3	0	3	0
		Migrated Values		6 EA	3	0	3	0
	Notes: Reconstructed upper pier caps, upper columns and abut. stems in 2009. 1 column at W. end has vertical cracking present. 2012-16 2 columns at E. end has cracking at column corners. 2012-16 The cracks are wide, .05" and greater. 2016							
215	Reinforced Concrete Abutment	Routine	09/15/2016	117 LF	117	0	0	0
		Migrated Values		117 LF	117	0	0	0
	Notes: Reconstructed upper pier caps and upper 3' of abut. stems in 2009. Reconstructed abut. stems and wings in 2009.							
234	Reinforced Concrete Pier Cap	Routine	09/15/2016	96 LF	96	0	0	0
		Migrated Values		96 LF	96	0	0	0
	Notes: Reconstructed upper 5' of piercaps, upper columns and abut. stems in 2009. 48 + 48 = quantity (2011)							
300	Strip Seal Expansion Joint	Routine	09/15/2016	100 LF	100	0	0	0
		Migrated Values		100 LF	100	0	0	0
	Notes: Deck and superstructure replaced in 2009. 2 expansion joints X 49.4' long. (2011)							
301	Pourable Joint Seal	Routine	09/15/2016	68 LF	16	10	42	0
		Migrated Values		68 LF	16	10	42	0
	Notes: Sealant failing. 2013 CS-2 Minor adhesion failure. 2016 CS-3 Complete adhesion failure. 2016							

BRIDGE 6599 CSAH 31(EB MRYLD) OVER PED TRAIL

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
310	Elastomeric Bearing	Routine	09/15/2016	18 EA	18	0	0	0
		Migrated Values		18 EA	18	0	0	0
Notes: Expansion bearings located at the abuts. 2013 Bearings are in good condition. 2014								
313	Fixed Bearing	Routine	09/15/2016	2 EA	2	0	0	0
		Migrated Values		2 EA	2	0	0	0
Notes: The fixed bearing areas consist of two concrete pier caps with a composite concrete deck pour on top. 2013								
321	Reinforced Concrete Approach Slab	Routine	09/15/2016	1120 SF	1116	4	0	0
		Migrated Values		1120 SF	1116	4	0	0
Notes: Diagonal cracking present. 2013-16 Unsealed cracks at both approaches. (minor in size) 2014-16 4 SF area starting to delaminate at the E. end block. 2016								
330	Metal Bridge Railing	Routine	09/15/2016	109 LF	109	0	0	0
		Migrated Values		109 LF	109	0	0	0
Notes: Deck and superstructure replaced in 2009.								
	515 - Steel Protective Coating	Routine	09/15/2016	327 SF	327	0	0	0
		Migrated Values		327 SF	327	0	0	0
331	Reinforced Concrete Bridge Railing	Routine	09/15/2016	109 LF	100	9	0	0
		Migrated Values		109 LF	100	9	0	0
Notes: Deck and superstructure replaced in 2009. Vertical cracks are present, with leaching. 2016								
800	Critical Deficiencies or Safety Hazards	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION. 2016								
810	Concrete Decks - Cracking & Sealing	Routine	09/15/2016	494 LF	494	0	0	0
		Migrated Values		494 LF	494	0	0	0
Notes: Unsealed insignificant cracks, less than .012" wide. 2016								
815	Plow Fingers	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
856	Secondary Members (Substructure)	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Crash strut location. 2016								
883	Concrete Shear Cracking	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Use this element to monitor the presence of shear cracking on concrete elements. Pay particular attention to the concrete pier caps.								
892	Slopes & Slope Protection	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Slope paving cracked from adjacent construction activity. 2013								
893	Guardrail	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Guardrail is in good condition. 2013-14 Posted speed does NOT exceed 40 MPH. 2014								

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
894	Deck & Approach Drainage	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Use this element to rate the condition, function, and adequacy of the drainage system.								
895	Sidewalk, Curb, & Median	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Minor concrete cracking present. 2011-16 Cracks are not sealed. 2014-16 Concrete walk has popouts present. 2014-16								
900	Protected Species	Routine	09/15/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
Notes: Use this element to track the presence of protected species living on this structure. None found in 2016.								

General Notes: Old structure removed and new structure completed 2009.
Parks department construction activity under the bridge. 2013
Trail construction in progress, grade change under the bridge = 3 feet +/- 2013

58. Deck NBI: Deck and superstructure replaced in 2009.
Bridge Classification - 109 - Concrete Slab Span (2011)
Minor concrete cracking. No delams. or spalls. 2013

36A. Brdg Railings NBI: Type P-1 mod. concrete rail

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail Terminal NBI:

59. Superstructure NBI: Deck and superstructure replaced in 2009.
Bridge Classification - 109 - Concrete Slab Span (2011)
Minor concrete cracking. 2013

60. Substructure NBI: Deck and superstructure replaced in 2009.
Reconstructed upper pier caps and abutment stems in 2009. (2011)

61. Channel NBI:

62. Culvert NBI:

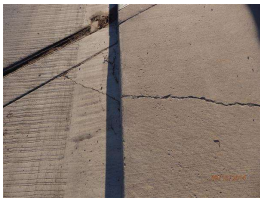
71. Waterway Adeq NBI:

72. Appr Roadway Alignment NBI:

Inventory Notes:

Dan Reimer
Inspector's Signature

Glenn Pagel
Reviewer's Signature



1. jerry 014.JPG



2. 2011 deckview_2.jpg



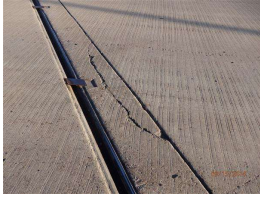
3. 2011 deckview_3.jpg



4. jerry 016.JPG



5. 2011 elevation view_2.jpg



6. jerry 018.JPG



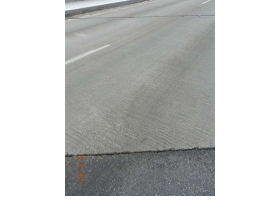
7. 2011 elevation view_3.jpg



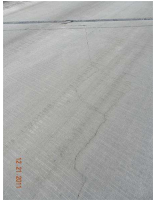
8. jerry 016.JPG



9. approach E.side cracks_1.jpg



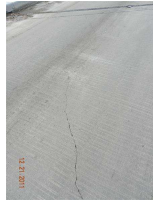
10. approach E.side cracks_3.jpg



11. approach E.side cracks_4.jpg



12. approach E.side cracks_5.jpg



13. approach E.side cracks_6.jpg



14. approach E.side cracks_7.jpg



15. approach W.side cracks_1.jpg



16. approach W.side cracks_2.jpg



17. approach W.side cracks_5.jpg



18. deck cracking_1-1.jpg



19. deck cracking_1-2.jpg



20. deck cracking_1-3.jpg



21. deck cracking_2-1.jpg



22. deck cracking_2-2.jpg



23. deck cracking_2-3.jpg



24. deck cracking_3-1.jpg



25. deck cracking_3-2.jpg



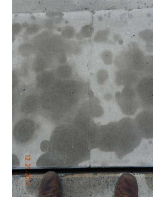
26. deck cracking_3-3.jpg



27. deck cracking_12-1.jpg



28. deck cracking_12-2.jpg



29. deck cracking_13-1.jpg



30. deck cracking_13-2.jpg



31. deck cracking_14-1.jpg



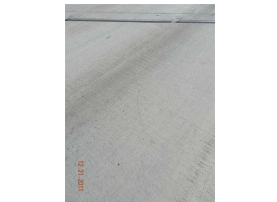
32. deck cracking_14-2.jpg



33. deck cracking_14-3.jpg



34. deck cracking_14-4.jpg



35. deck cracking_15-1.jpg



36. deck cracking_15-2.jpg



37. deck cracking_15-3.jpg



38. deck cracking_15-4.jpg



39. deck cracking_16-1.jpg



40. deck cracking_16-2.jpg



41. joint median.jpg



42. Maryland 6599 E. approach_cracks_4.jpg



43. Maryland 6599 N. median_cracks_1.jpg



44. Maryland 6599 N. median_cracks_2.jpg



45. Maryland 6599 N. median_cracks_3.jpg



46. Maryland 6599 N. median_cracks_4.jpg



47. Maryland 6599 N. median_cracks_5.jpg



48. Maryland 6599 N. median_cracks_6.jpg



49. Maryland 6599 N. median_cracks_7.jpg



50. Maryland 6599 W. approach_cracks_1.jpg



51. Maryland 6599 W. approach_cracks_3.jpg



52. Maryland 6599 W. approach_cracks_4.jpg



53. Maryland 6599 W. column_1.jpg



54. Maryland 6599 W. column_2.jpg



55. walk cracking_2.jpg



56. walk cracking_3.jpg



57. walk cracking_4.jpg



58. walk cracking_5.jpg



59. walk cracking_6.jpg



60. walk cracking_8.jpg



61. walk cracking_9.jpg



62. walk cracking_10.jpg



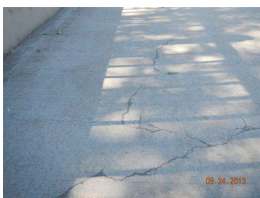
63. walk cracking_11.jpg



64. 9-24-13 01.jpg



65. 9-24-13 02.jpg



66. 9-24-13 04.jpg



67. 9-24-13 05.jpg



68. 9-24-13 06.jpg



69. 9-24-13 08.jpg



70. 9-24-13 012.jpg



71. 9-24-13 013.jpg



72. 9-24-13 016.jpg



73. 9-24-13 017.jpg



74. 9-24-13 018.jpg



75. 9-24-13 019.jpg



76. 10-2-2013_002.JPG



77. 10-2-2013_003.JPG



78. 10-2-2013_004.JPG



79. 10-2-2013_005.JPG



80. 10-2-2013_011.JPG



81. 10-2-2013_012.JPG



82. abut E.side_020.jpg



83. abut E.side_022.jpg



84. abut E.side_023.jpg



85. abut W.side_039.jpg



86. abut W.side_052.jpg



87. median joint East
029.jpg



88. median joint West
040.jpg